InTenZ: E-Clean Pro-NGX
Heavy Industrial Foundry Systems

High-Capacity Furnace Thermal Stress Audit & Gas Conditioning Case Study

1. Industrial Infrastructure Framework

Documents the continuous field operational profile of the *E-Clean Pro* non-chemical fluid and gas conditioning technology architecture within a heavy industrial foundry melting line.

- **Testing Application:** Heavy foundry furnace line (3.3-Short Ton Capacity, Unit 6).
- **Timeline Tracked:** Pre-installation control baseline logged from October 1, 2023, to March 12, 2024. Post-installation horizon logged through June 2024.



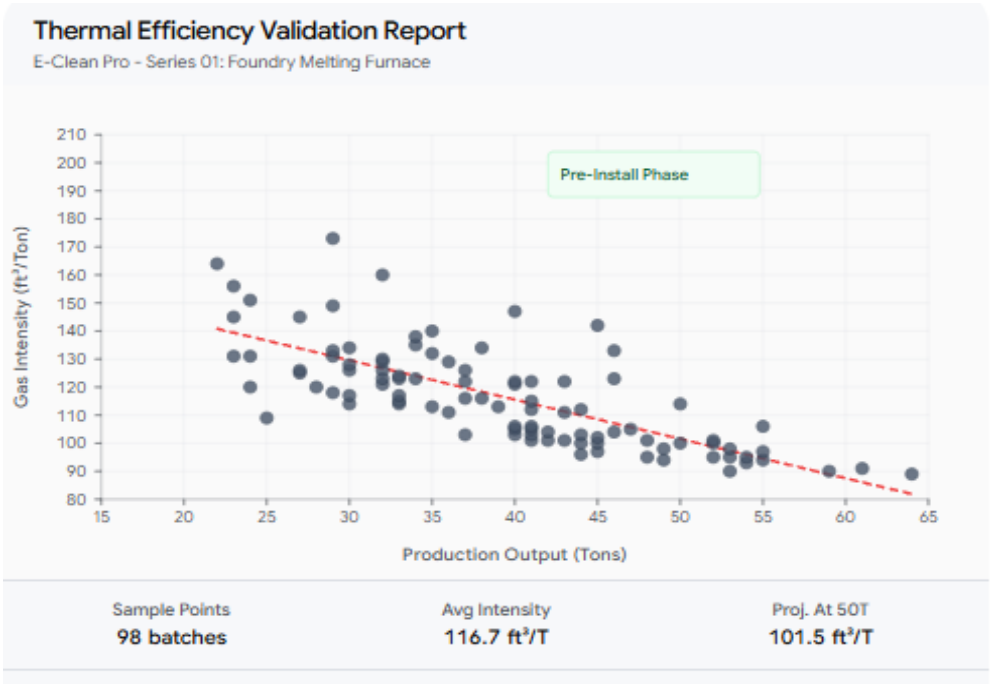
2. Combustion & Fuel Efficiency Matrix

By physically separating tangled molecular clusters, the *E-Clean Pro* maximizes oxygen access to unlock hidden BTUs, achieve a complete burn, and reduce fuel volume. Initial parameters recorded an internal 30-day stabilization cycle where the molecular conditioning system cleared legacy soot accumulation from burner heads before yielding massive volumetric compression.

Evaluated Parameter	Pre-Treatment Control Baseline	InTenZ Post-Stabilization (Months 2–3)	Net Technical Outcome / ROI Impact
Average Natural Gas Consumption	Standard Baseline (100%)	9.0% to 9.5% Absolute Volumetric Reduction	Sustained thermal efficiency achieved via improved molecular gas arrangement and completed burner cleaning.
Burner Scale & Fouling Rate	Persistent Carbon Accretion	Eradicated After Day 30	Continuous self-cleaning eliminates high-frequency manual nozzle adjustments.

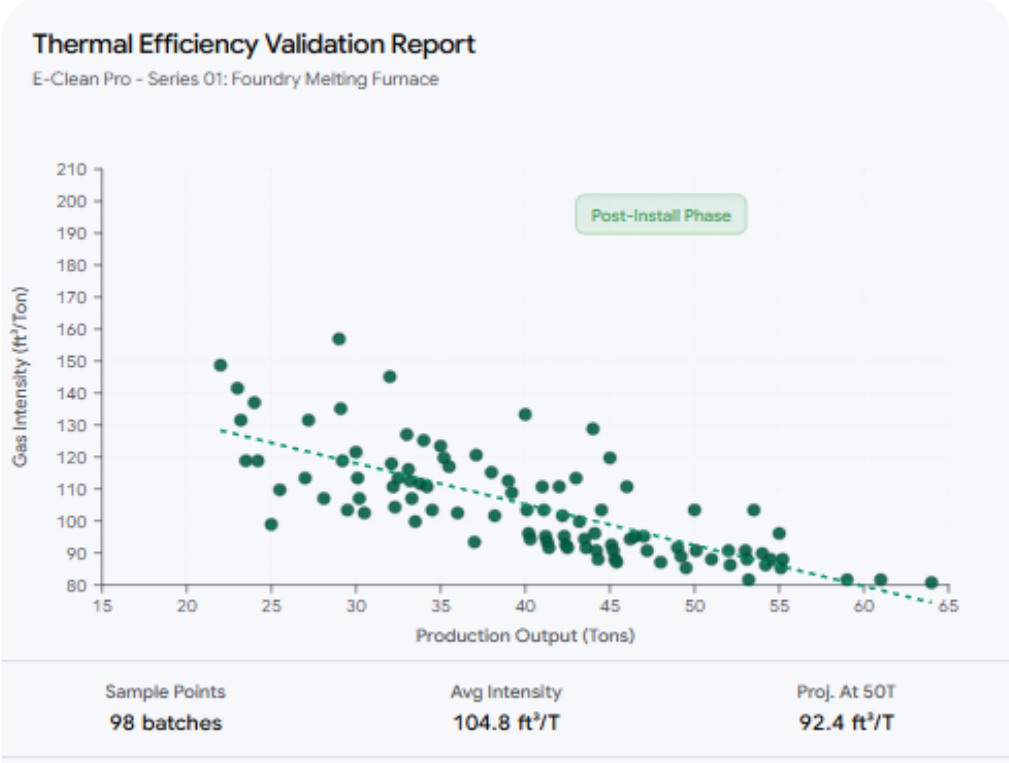
The "Before" Chart (Pre-Install Baseline)

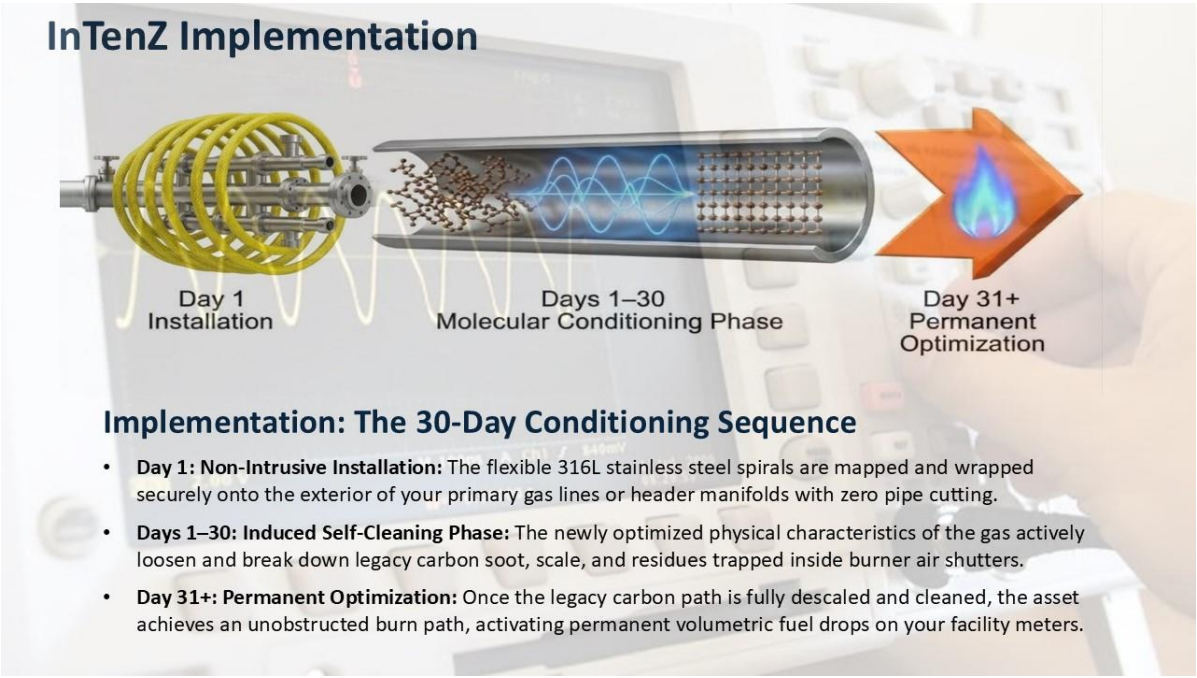
- **What it represents:** The Status Quo & Inefficiency.
- This chart shows the facility's historical standard operation. It proves that under standard conditions, the machine burns more fuel than it needs to. It establishes an undeniable, mathematically validated baseline of energy waste that the client is currently paying for every single month.



The "After" Chart (Post-Install Phase)

- **What it represents:** Verified Return on Investment (ROI).
- This chart shows the machine running with the E-Clean Pro fully operational. Because the entire cloud of green data points and the trendline have physically dropped lower on the graph, it proves that the fuel savings are permanent and happen across all levels of production output.





Performance Verification Metrics

- **Baseline (Pre-Installation):** 116.7 ft³/T standard operational average across 98 logged test batches.
- **Days 1–30 (Conditioning Phase):** Stable fuel consumption tracking closely to baseline while molecular resonant frequencies initiate internal carbon descaling.
- **Day 31+ (Permanent Optimization):** System fully stabilized at 104.8 ft³/T, locking in a permanent, verified 9.3% reduction in total gas intensity.

3. US Regulatory Alignment & Risk Mitigation

- **Industrial Decarbonization Mandates:** Shaving up to 9.5% off natural gas volumes assists manufacturing sites in satisfying strict US Scope 1 greenhouse gas limits.

4. B2B Commercial Value Proposition & Facility ROI

- **Direct OpEx Credit Yields:** A verified 9.5% reduction in high-volume gas requirements drives extreme utility procurement cost cutbacks.



Technical Notes & Asset Protection: This document summarizes real-world operational performance data compiled and verified by independent technical field engineers. All underlying asset identifiers have been anonymized to protect proprietary operating metrics under standard compliance guidelines.